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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,597	12/29/2005	Jyrki Kauppinen	028443-071	1736

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EXAMINER

COOK, JONATHON

ART UNIT	PAPER NUMBER
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2886

NOTIFICATION DATE	DELIVERY MODE
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11/01/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com
debra.hawkins@bipc.com

114

Office Action Summary	Application No. 10/529,597	Applicant(s) KAUPPINEN, JYRKI	
	Examiner Jonathon D. Cook	Art Unit 2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/29/2005</u> . | 6) <input checked="" type="checkbox"/> Other: <u>Examiner's Amendment</u> . |

Detailed Action

Examiner's Amendments

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew L. Schneider (32,814) on 10/24/2007.

The application has been amended as follows:

In **Claim 17**, line 1, the dependency has been changed to --claim 16--

In **Claim 18**, line 1, the dependency has been changed to --claim 16--

In **Claim 19**, line 1, the dependency has been changed to --claim 18--

In **Claim 20**, line 1, the dependency has been changed to --claim 16--

In **Claim 21**, line 1, the dependency has been changed to --claim 20--

In **Claim 22**, line 1, the dependency has been changed to --claim 20--

In **Claim 23**, line 1, the dependency has been changed to --claim 20--

In **Claim 24**, line 1, the dependency has been changed to --claim 16--

In **Claim 25**, line 1, the dependency has been changed to --claim 20--

In **Claim 26**, line 1, the dependency has been changed to --claim 25--

In **Claim 28**, line 1, the dependency has been changed to --claim 27--

In **Claim 29**, line 1, the dependency has been changed to --claim 27--

Specification Objections

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are

solved by the applicant's invention. This item may also be titled "Background Art."

- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the

applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

- (I) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

The disclosure is objected to because of the following informalities:

Each of the above listed sections must be titled so examiner can clearly distinguish between them.

Appropriate correction is required.

Drawing Objections

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the *panel-like skirt element serving as a door frame* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the *panel-like skirt element* as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either

"Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: In **fig. 1** the laser (**10**) and double sensor (**11**) are not labeled. In **Figs. 2-3** the silicon door (**3**), the first chamber (**V₀**), and the panel-like skirt are not labeled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims

are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 16, 20, 21, 23, 25, & 26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 9, & 10 of U.S. Patent No. 7,208,737. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

claim 16 merely claims a general means of detecting pressure rather than the specific use of an interferometer.

Claims 16, 20, 25, & 26 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of copending Application No. 11/547,084. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims claim an additional light source for measuring door movement but are substantially the same.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Objections

Claim 25 objected to because of the following informalities: In line 3 of the claim the volume is referred to with the reference character V, which must be in parentheses but is not. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17 & 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding **Claim 17**, the applicant claims that the door has a surface area which is at most equal to that of the aperture provided in the first chamber. However, the examiner is confused as to what property of the aperture the surface area door is equal to. For examination purposes the examiner shall construe the surface area of the door to be at most equal to the surface area of the aperture as determined by the dimensions of the aperture.

Regarding **Claim 29**, the applicant claims that the sensor does not comprise sensors fixedly mounted thereon and/or fixedly arranged in communication therewith for detecting and/or measuring the door movement. This is a negative limitation and is indefinite because where the metes and bounds of the claim lie is confusing.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 16, 18, 20-22, are rejected under 35 U.S.C. 102(b) as being anticipated by **de Paula et al** (*High-sensitivity optical microphone for photoacoustics*, Rev. Sci. Instrum, June 1992, pp. 3487-3491, Vol. 63, No. 6, American Institute of Physics) (de Paula).

Regarding **Claim 16**, de Paula discloses and shows in **fig. 2** a microphone for photoacoustics, comprising:

a photoacoustic cell (applicant's first chamber) suppliable with a gas to be analyzed;

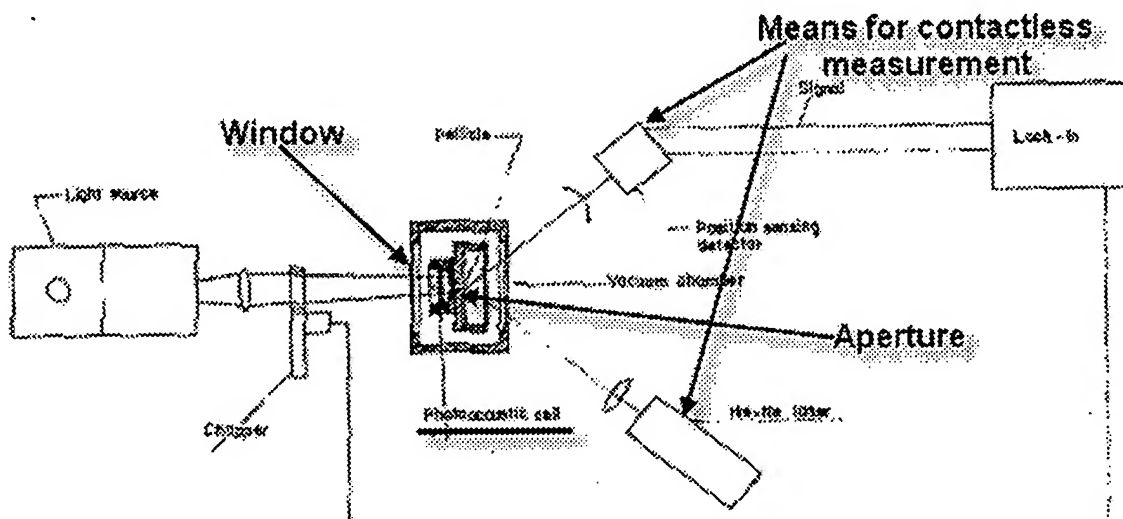
a window for letting modulated and/or pulsed infrared radiation and/or light in the first chamber (see modified figure 2);

a means for detecting pressure variations created in the first chamber by the absorbed infrared radiation and/or light, where the means for detecting pressure

variations created in the first chamber by absorbed infrared radiation and/or light, comprise:

an duct (applicant's aperture) provided in the wall of the first chamber, in communication with which is provided a pellicle (applicant's door) adapted to be movable in response to movement of a gas (see modified figure 2);

a means for contactless measurement of the door movement (see modified figure 2);



(Modified figure 2)

With regard to **claim 16**, language that does not limit a claim limitation to a particular structure does not limit the scope of the claim. It has been held that the recitation that an element is "adapted to", "configured to", "designed to", or "operable to" perform a function is not a positive limitation but only requires the ability to so perform and does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 139.

Further, the means for detecting pressure variations is not a proper means + function limitation since the claim further goes on to include structure of the means for detecting pressure variations. For purposes of examination the examiner will not consider this means for statement to invoke U.S.C. 112 6th paragraph.

Regarding **Claim 18**, de Paula discloses mounting the pellicle slightly laterally displaced in relation to the duct so that one side of the pellicle touches the border of the duct (**Section II, 2nd paragraph**).

Regarding **Claims 20 & 21**, de Paula discloses and shows in **fig. 2** the means for a contactless measurement comprises an optical measuring system, comprising:

an He-Ne laser (applicant's one or more light source) for illuminating the door as a part thereof; and

a position sensing detector (applicant's one or more detectors) for receiving light reflected from the door and for measuring the door movement as an optical angular and/or translatory measurement.

Regarding **Claim 22**, de Paula discloses the sensor is a bi-cell position sensing silicon photodetector (applicant's double sensor).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 19 & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **de Paula**.

Regarding **Claim 19**, de Paula discloses the above.

de Paula fails to explicitly disclose the door and the frame are fabricated from silicon;

However, the choice of one material over another is obvious unless there is a particular reason for it not to be.

Therefore, it would at least been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of de Paula with the door and frame made from silicon because it has been held to be within the general skill of a worker in the art to select a known material on the basis of it's suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding **Claim 25**, de Paula discloses the above.

de Paula fails to explicitly disclose the means of a contactless measurement of the door movement are provided in a second chamber which constitutes a measuring space with a volume (V) and which is in communication with the first chamber by way of the first chamber's aperture.

However, while de Paula does not explicitly show the second chamber that contains the laser and detector they at least would obviously be in some sort of chamber and whether it is a room in a lab or a specific housing to contain them and this chamber would have to have a volume. Further, this chamber would have to be in at least optical communication with the pellicle in order to function as disclosed and therefore in communication with the first chamber via the aperture.

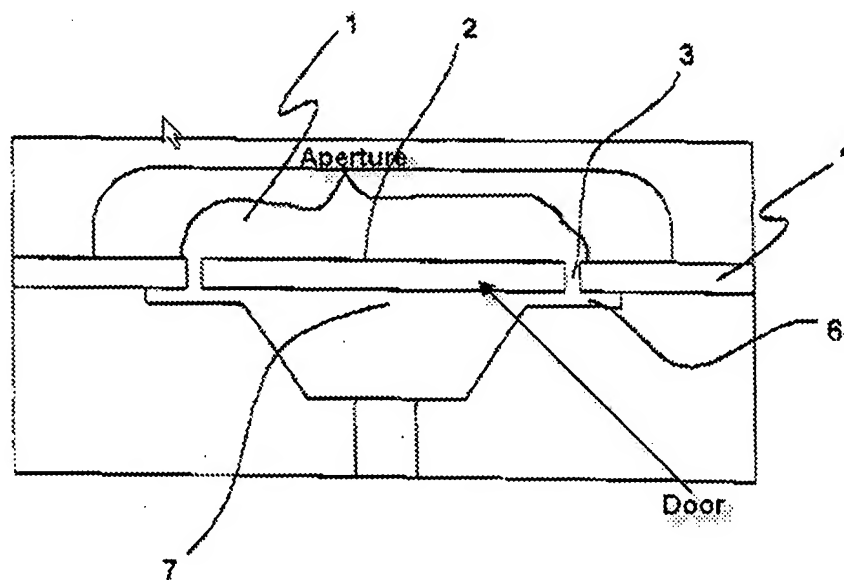
Therefore, it would at least been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of de Paula with the second chamber which constitutes a measuring space with a volume (V) and which is in communication with the first chamber by way of the first chamber's aperture because it would have been an obvious matter of design choice to have the second chamber which contains the means of contactless measurement since applicant has not disclosed it solves any particular problem and it appears the invention would perform equally well with or without it.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over **de Paula** in view of **Meringdal** (US PAT 6,474,168) (Meringdal).

Regarding **Claim 17**, de Paula discloses the above.

de Paula fails to explicitly disclose the door has a surface area which is at most equal to the surface area of the aperture.

However, Meringdal teaches and shows in **fig. 4** a sensor diaphragm (2) which is slightly smaller than the aperture (see Modified figure 4).



(Modified figure 4)

Therefore, it would at least been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of de Paula with the door has a surface area which is at most equal to the surface area of the aperture because it will allow for freedom of movement of the door, which will not be brushing against the side of the aperture, and therefore provide better sensitivity to vibratory impulses due to pressure shifts.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over **de Paula** in view of **Hawke** (US PAT 3,471,238) (Hawke).

Regarding **Claim 23**, de Paula discloses the above.

de Paula fails to explicitly disclose the source and detector are designed as a part of an interferometer;

However, Hawke teaches and shows in **fig. 1** an interferometric method for measuring the velocity of a shocked reflective surface. The interferometer includes a laser and a frequency recording apparatus (abstract);

Therefore, it would at least been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of de Paula with the source and detector are designed as a part of an interferometer because interferometry is known to be very accurate for measuring distances or slow displacements (**Column 1, lines 47-49**), as taught in Hawke.

With regard to **claim 23**, language that does not limit a claim limitation to a particular structure does not limit the scope of the claim. It has been held that the recitation that an element is "adapted to", "configured to", "designed to", or "operable to" perform a function is not a positive limitation but only requires the ability to so perform and does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 139.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over **de Paula** in view of **Applicant's Admitted Prior Art (AAPA)**.

Regarding **Claim 24**, de Paula discloses the above.

de Paula fails to disclose the means for contactless measurement of the door movement comprises a capacitive measuring system as claimed.

However, AAPA teaches The pressure sensor comprises typically a microphone, a thin Mylar or metal film. A photoacoustic detector can be used for measuring or detecting infrared radiation in general, but one specific and important application of a detector deals with the measurement and detection of gases or gas mixtures regarding for example air quality and pollution. In microphones, the movement of a film (Mylar) is usually measured capacitively. The Mylar film is coated with metal and placed in the proximity of another solid metal diaphragm (**Paragraphs 3 & 4 of the instant application**).

Therefore, it would at least been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of de Paula with the means for contactless measurement of the door movement comprises a capacitive measuring system as claimed because it is a typical and well known means for measuring pressure change and would yield predictable results.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over **de Paula** in view of **Sakata** (US PAT 5,629,757) (Sakata).

Regarding **Claim 26**, de Paula discloses the above.

de Paula fails to disclose a third chamber, similar to the first chamber as claimed, the measuring of the door of the third chamber similar to that of the measuring of the door in the first chamber, and a means for calculating the amplitude of an actual measuring signal measured from the sensor arranged in the first chamber aperture and

a reference signal measured from the sensor arranged in the third chamber aperture, and working out a difference therebetween.

However, Sakata teaches and shows in **fig. 1** a laser strainmeter using reference resonators, which are multiple reflection Fabry-Perot interferometers (**Column 3, lines 48-50**). The difference between the sensor resonator and reference resonator is detected with a counter (**26**). Then the strain changes are calculated from this difference (**Column 5, lines 17-23**). Further, the laser strainmeter may be disposed not only in the earth's crust but also in a liquid or a gas as a medium to use it as a pressure gauge (**Column 6, lines 10-13**).

Therefore, it would at least been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of de Paula with the third chamber in order to use it as a reference chamber because it would allow for a more precise measurement of the pressure change by removing noise caused by temperature or atmospheric fluctuations in the second chamber.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by **Meringdal**.

Regarding **Claim 27**, Meringdal discloses and shows in **fig. 4** a sensor for a photoacoustic detector, comprising:

a frame (4) (applicant's panel-like skirt element serving as a door frame); and
a diaphragm (2) (applicant's door) separated from the panel like skirt element by means of a restriction (3) (applicant's gap).

Regarding **Claim 28**, Meringdal discloses and shows in **fig. 4** that the sensor is in communication with measurement chamber (7) included in a photoacoustic detector and contains a gas to be analyze, such that the door is moved by pressure variations created in the chamber by absorbed infrared radiation and/or light (Column 10, lines 20-51).

Regarding **Claim 29**, Meringdal discloses the above. Since this claim is drawn to an invalid negative limitation only the aforementioned prior art disclosure also satisfies this claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathon D. Cook whose telephone number is (571)270-1323. The examiner can normally be reached on Mon-Fri 9:00am to 5:30pm.

Application/Control Number:
10/529,597
Art Unit: 2886

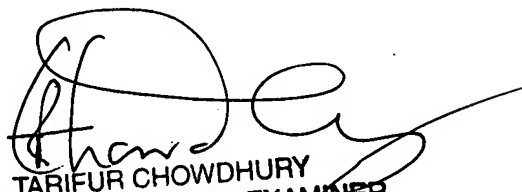
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571)272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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October 26th, 2007

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